

Serial No. 09/935,897

Attorney Docket No. 97541.00012

Remarks

Claims 1-21, which were previously withdrawn, are cancelled without prejudice to present these claims in a separate continuation or divisional application. Claims 23-25 and 28-29 are cancelled without prejudice to present these claims in a separate continuation or divisional application. New claims 31 and 32 are added. Accordingly, claims 22, 26-27 and 30-32 are now pending.

In the February 9, 2006 Office Action, the Examiner has withdrawn the previous rejection of claims 22-29 under 35 U.S.C. § 112, first paragraph for failing to comply with the written description requirement. The Examiner has also withdrawn the previous rejection of claims 22, 23, 25 and 26 under 35 U.S.C. § 102(b) as being anticipated by WO 89/09806.

In the February 9, 2006 Office Action, claims 22-30 were rejected under 35 U.S.C. § 112 as failing to comply with the written description requirement. Claims 22-29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Reny, WO 89/09806. Claims 22, 23, 25-27, and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Meyer, U.S. Patent No. 5,118,434, or Maes, U.S. Patent No. 5,366,651. Claims 22-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hansen, U.S. Patent No. 4,728,452, or Wood, U.S. Patent No. 4,455,248. Claims 22, 23 and 25-27 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting over claims 1-11 of copending Application No. 10/264,041, claims 1-10 of Application No. 10/347,900, claims 27-50 of Application No. 10/910,497 and claims 30-33 of Application No. 10/935,982.

Claim 22 has been amended to recite an embodiment of the present invention wherein the oral toxicity of an aqueous fluid containing ethylene glycol is reduced by

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adding propylene glycol to the fluid such that the concentration of propylene glycol in the resulting fluid is between about 1 percent by weight to less than 30 percent by weight of the total weight of the ethylene glycol fraction and the propylene glycol fraction in the resulting fluid. Support for this amendment may be found in the published application (Publication No. US2002/0171063) at paragraphs 0043, 0058-0068 and claim 22. These paragraphs describe an embodiment of the invention wherein a second glycol, such as propylene glycol, is added to a fluid containing ethylene glycol to reduce the oral toxicity of the fluid. Paragraphs 0058-0068 disclose the results of toxicity tests for combinations of ethylene glycol and propylene glycol within the claimed range. Accordingly, the amendment to claim 22 is fully supported by the application as filed and no new matter is added.

Claims 26 and 27 have been amended to depend from claim 22.

New claims 31 and 32 recite an embodiment of the present invention wherein the oral toxicity of an aqueous fluid containing ethylene glycol is reduced by adding glycerol to the fluid such that the concentration of glycerol in the resulting fluid is between about 5 percent by weight and about 20 percent by weight of the total weight of the ethylene glycol fraction and the glycerol fraction in the resulting fluid. Support for this amendment may be found in the published application at paragraphs 0043, 0080-0083 and claim 22. These paragraphs describe an embodiment of the invention wherein a second glycol, such as glycerol, is added to a fluid containing ethylene glycol to reduce the oral toxicity of the fluid. Paragraphs 0080-0083 disclose the results of toxicity tests for combinations of ethylene glycol and glycerol within the claimed range. Accordingly, new claims 31 and 32 are fully supported by the application as filed and no new matter is added.

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As recited in claims 22, 26-27 and 30 as amended and new claims 31 and 32, the present invention is directed to methods of reducing the oral toxicity of aqueous fluids containing ethylene glycol by mixing propylene glycol or glycerol with the fluid containing ethylene glycol. As recited in claims 22, 26-27 and 30 as amended, when propylene glycol is used to reduce the oral toxicity of the fluid containing ethylene glycol, the propylene glycol is provided in an amount such that the concentration of the propylene glycol in the fluid is equal to between about one percent by weight and less than 30 percent by weight of the sum of the ethylene glycol and the propylene glycol in the resulting fluid.

As recited in new claims 31-32, when glycerol is used to reduce the oral toxicity of the fluid containing ethylene glycol, the glycerol is provided in an amount such that the concentration of the glycerol in the fluid is equal to between about 5 percent by weight and about 20 percent by weight of the sum of the ethylene glycol and the glycerol in the resulting fluid.

As described in the specification at paragraphs 0024-0030, prior to the disclosure of the present invention, it had been known only that the addition of a less toxic substance to a more toxic substance would result in a mixture that was reduced in toxicity to the extent that the more toxic substance was diluted by the addition of the less toxic substance. As set forth in the specification at, inter alia, paragraphs 0058-0069 and 0080-0083, the present inventors unexpectedly discovered that addition of propylene glycol or glycerol to fluids containing ethylene glycol, such as for example heat transfer fluids used in automobiles, unexpectedly reduced the oral toxicity of the ethylene glycol based fluids far below the levels which would have been predicted based on the toxicity of each substance alone. Ethylene glycol is commonly used in heat transfer fluids containing water to reduce the freezing point of the fluid. Ethylene glycol is relatively inexpensive.

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However, ethylene glycol has an oral toxicity rating that is relatively high. As set forth in the specification, addition of as little as one percent by weight of propylene glycol, or as little as five percent by weight glycerol, can reduce the oral toxicity of the resulting fluid to the point where it is considered non-toxic (note that a higher LD₅₀ indicates lower oral toxicity, i.e. more material must be ingested to cause a toxic effect).

As set forth in detail above, the claims as amended and new claims 31-32 are fully supported and described in the specification as filed. Accordingly, applicants respectfully request that the rejection under 35 U.S.C. § 112 be withdrawn.

For at least the reasons presented below for each reference cited by the Examiner, claims 22, 26-27 and 30 as amended, and new claims 31 and 32 are patentable under U.S.C. § 103 over the prior art references cited by the Examiner. None of the references cited by the Examiner recognize the problem of oral toxicity of ethylene glycol based heat transfer fluids, much less teach or suggest a solution to this problem. Moreover, although the references cited by the Examiner recite generically that ethylene glycol and other alkylene glycols may be combined, none of the references cited by the Examiner teach or suggest combining ethylene glycol and propylene glycol in the ranges recited in the claims, which provide unexpectedly reduced oral toxicity. The cited references are therefore insufficient to support a rejection under 35 U.S.C. § 103(a). *See In re Baird*, 16 F.3d 380, 382 ("The fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that compound obvious."). *See also In re Petering*, 301 F.2d 676, 681 (Fed. Cir. 1962) (where the prior art reference contains a broad disclosure that encompasses a vast number of compounds, the reference will not anticipate a narrow species of compounds that may be within the broadly described genus).

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The Rejection Under 35 U.S.C. § 103(a) Based Upon Reny

Claims 22-29 stand rejected under 35 U.S.C. § 102(b) under Reny, WO 89/09806. Claims 23-25 and 28-29 have been cancelled. For at least the reasons set forth below, claims 22, 26-27 and 30 as amended, and new claims 31-32 are patentable over Reny under 35 U.S.C. § 103(a).

Reny describes a heat transfer fluid containing alkylene glycols, corrosion inhibitor additives, phosphoric acid to buffer the pH of the fluid and up to 10 percent water. At page 3, lines 1-15, Reny describes among the components of the composition: "at least 90 weight percent of an alkylene glycol or a mixture of two or more alkylene glycols". Reny states that the compound may contain ethylene glycol, propylene glycol, glycerol, or "two or more thereof in any proportion." Page 4, lines 5-6. Thus, Reny describes in a general fashion a virtually infinite number of combinations of ethylene glycol, propylene glycol and glycerol. Reny goes on to state that the alkylene glycol is preferably propylene glycol or a mixture having at least 30 weight percent propylene glycol. Page 4, lines 6-10. All of the compositions specifically described by Reny include at least 30 percent by weight propylene glycol.

Claims 22, 26-27 and 30 recite mixing between about 1 percent to less than 30 percent propylene glycol with an ethylene glycol based fluid, and claims 31-32 recite mixing between about 5 percent by weight and about 20 percent by weight glycerol with an ethylene glycol based fluid. Reny does not teach or suggest adding propylene glycol or glycerol to an ethylene glycol based fluid in the proportions recited in the claims as amended. In fact, Reny states that the composition described therein should preferably contain at least 30 percent by weight propylene glycol. Therefore, Reny provides no motivation to combine propylene glycol and ethylene glycol, or glycerol and ethylene glycol, in the proportions recited in the claims as amended, and suggests to the contrary

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that it would be undesirable to make such a combination. Accordingly, the claims as amended are not obvious in view of Reny. See *In re Baird*, 16 F.3d 380 383 (Fed. Cir. 1994)(finding a smaller subset of compounds unobvious in view of a reference disclosing a vast number of compounds, particularly where disclosure indicates a preference leading away from the claimed compounds); MPEP § 2144.08.

Reny provides at most a broad, general description of fluids that may contain ethylene glycol, propylene glycol and/or glycerol in "in any proportions." This broad, generic description is not sufficient to render the specific combinations recited in the claims as amended obvious. See *In re Baird*, 16 F.3d 380, 382 ("The fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that compound obvious."). The only specific combination described by Reny is a fluid containing 70 parts ethylene glycol and 30 parts propylene glycol. This combination is not covered by the claims as amended.

At page 6 of the Office Action, the Examiner states that Reny suggests reducing the toxicity of an ethylene glycol based fluid by addition of a polyhydric alcohol such as glycerol. There is no such teaching or suggestion in Reny, and the Examiner does not cite any portion of Reny to support the statement. Reny does not recognize the problem of the toxicity of the heat transfer fluids, much less teach or suggest a solution to this problem. Moreover, Reny does not describe heat transfer fluids having the specific proportions of ethylene glycol, propylene glycol or glycerol recited in the claims as amended, nor does Reny recognize or suggest that additions of propylene glycol or glycerol in the ranges recited will reduce the toxicity of an ethylene glycol based fluid.

Accordingly, for at least these reasons, the claims 22, 26-27 and 30-32 are not obvious in view of Reny.

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The Rejection Under 35 U.S.C. § 103(a) Based Upon Meyer

Claims 22-30 stand rejected based upon Meyer, U.S. Patent No. 5,118,434.

Claims 23-25 and 28-29 have been cancelled. For at least the reasons set forth below, claims 22, 26-27 and 30 as amended, and new claims 31-32 are patentable over Meyer under 35 U.S.C. § 103(a).

Meyer describes deicing solutions comprising alkylene glycols, water, corrosion inhibitors, and one or more polymeric additives. The composition described by Meyer includes the polymeric additives to prevent precipitation of materials contained in the composition, and precipitation of materials contained in water that may be mixed with the composition. Meyer is directed to the problem of precipitates formed in deicing solutions. Meyer states that the glycol-based deicing fluids may contain from 50-99 percent alkylene glycols. However, Meyer does not describe, teach or suggest combining ethylene glycol based fluids with either propylene glycol or glycerol in any specific proportions, much less in the specific proportions recited in the claims as amended. Indeed, while Meyer lists propylene glycol and ethylene glycol among numerous substances that may be used in the deicing compositions described therein, in all of the examples provided by Meyer, ethylene glycol is the only alkylene glycol used. Col. 5, line 28-col. 6, line 37. Moreover, Meyer does not even recognize the problem of toxicity of ethylene glycol based fluids, much less describe, or otherwise teach or suggest, a method to reduce the toxicity of ethylene glycol containing fluids by mixing propylene glycol or glycerol with the ethylene glycol based fluid as recited in the claims as amended. The general description that compounds may be mixed does not render obvious specific formulations that provide unexpected results. See In re Baird, 16 F.3d 380, 382 ("The fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that compound obvious.").

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Claims 22, 26-27 and 30 as amended and new claims 31-32 are patentable over Meyer under 35 U.S.C §103. Claims 22, 26-27 and 30 recite mixing between about 1 percent to less than 30 percent propylene glycol to with an ethylene glycol based fluid, and claims 31-32 recite mixing between about 5 percent by weight and about 20 percent by weight glycerol with an ethylene glycol based fluid. Meyer does not describe combining ethylene glycol with propylene glycol or glycerol in any amount to reduce the oral toxicity of an ethylene glycol containing fluid, and Meyer clearly does not describe combinations of ethylene glycol with either propylene glycol or glycerol in the proportions recited in the claims as amended. As demonstrated by the test results set forth in the application at paragraphs 0058-0069 and 0080-0083, the oral toxicity of compositions containing ethylene glycol and either propylene glycol or glycerol in the specific proportions recited in the claims as amended was unexpectedly reduced to levels that render the compositions safe to use. Where, as here, the Applicant shows that a claimed range achieves unexpected results relative to the prior art, a prima facie case of obviousness is rebutted. In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990); MPEP § 2144.05. There is no teaching or suggestion in Meyer to use ethylene glycol and propylene glycol in any specific proportions, much less in the proportions recited in the amended claims, and there is no teaching or suggestion in Meyer of the results unexpectedly achieved by mixing the two in the proportions recited in the amended claims.

At pages 7-8 of the Office Action, the Examiner correctly states that Meyer does not teach with sufficient specificity a method for reducing the toxicity of an ethylene glycol based fluid by the addition of a polyhydric alcohol such as propylene glycol or glycerol. The Examiner incorrectly states, however, that it would have been obvious to one skilled in the art to reduce the oral toxicity of an ethylene glycol based fluid because

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Meyer teaches or suggests reducing the oral toxicity by addition of a diol such as propylene glycol. Meyer does not recognize or discuss the problem of reducing the oral toxicity of ethylene glycol based fluids, much less describe, teach or suggest a method to reduce the toxicity of a non-aqueous ethylene glycol based fluid as recited in the new and amended claims. Moreover, Meyer does not describe, teach or suggest, combining ethylene glycol containing fluids with either propylene glycol or glycerol in any specific proportions, much less the specific proportions recited in claims 22, 26-27 and 30 as amended and new claims 31-32, which resulted in a fluid having an unexpectedly large decrease in oral toxicity.

For at least the foregoing reasons, claims 22, 26-27 and 30 as amended and new claims 31-32 are patentable over Meyer under 35 U.S.C. § 103(a).

The Rejection Under 35 U.S.C. § 103(a) Based Upon Maes

Claims 22-30 stand rejected under 35 U.S.C. § 103 over Maes et. al., U.S. Patent Number 5,366,651. Claims 23-25 and 28-29 have been cancelled. For at least the reasons set forth below, claims 22, 26-27 and 30 as amended, and new claims 31-32 are patentable over Maes under 35 U.S.C. § 103(a).

Maes does not describe, teach or suggest a fluid containing any combination of ethylene glycol with either propylene glycol or glycerol, much less teach or suggest the combinations recited in the claims as amended. At col. 3, line 65 to col. 4, line 68, Maes states "The antifreeze formulations most commonly used include water and water soluble liquid alcohol freezing point depressants such as glycol and glycol ethers." In this sentence, Maes uses glycol in the singular and glycol ethers in the plural. In the sentence following, Maes provides a list of "glycol ethers which can be employed." Throughout the specification, Maes describes antifreeze formulations containing a single glycol, indicating that only a single glycol is used in the formulation. Thus, Maes plainly

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describes the use of a single glycol, and Maes does not teach or suggest any combination of glycols, much less the combination and proportions recited in the claims. For at least this reason, in addition to the reasons set forth in Applicants' August 16, 2004 Response to Office Action in this case, applicants' maintain that Maes does not describe, teach or suggest the combination of more than one glycol freezing point depressant for any reason, much less the addition of a second glycol to a fluid containing ethylene glycol to reduce the oral toxicity of the ethylene glycol-containing fluid as recited in the methods of the claims as amended.

Moreover, Maes does not teach or suggest combining ethylene glycol with propylene glycol for any purpose, much less for the purpose of forming a non-aqueous heat transfer fluid having reduced oral toxicity. At col. 3, lines 65-69, Maes states that freezing point depressants suitable for the fluid he describes are "glycol" and "glycol ethers." These are very different chemicals.

To those skilled in the art, the term "glycol" in the singular means ethylene glycol, a polyhydric alcohol with direct bonding between the carbon atoms. For example, in the Handbook of Chemistry and Physics, 42nd ed., in the listing of Physical Constants of Organic Compounds, the listing for "ethylene glycol" on page 992 says merely "see glycol" with no data listed. The listing for "Glycol" on page 1016 provides data only for ethylene glycol. Glycol ethers, on the other hand, consist of hydrocarbon groups bonded through an oxygen atom. At col. 3, line 69 through col. 4, line 8, Maes states, "The glycol ethers which can be deployed as major components in the present composition include glycols such as ethylene glycol, diethylene glycol, propylene glycol, and dipropylene glycol, and glycol monoethers such as the methyl, ethyl, propyl, and butyl ethers of ethylene glycol, diethylene glycol, propylene glycol, and dipropylene glycol." The sole mention of propylene glycol by Maes only appears in his listing of glycol ethers,

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i.e. as propylene glycol ether. Ethylene glycol, the preferred freezing point depressant in Maes, is listed at col. 3, line 67 as "glycol."

In addition, Maes does not describe, teach or suggest a method to reduce the oral toxicity of an ethylene glycol containing fluid by addition of a second glycol, such as propylene glycol or glycerol, as recited in the amended claims. Even if Maes described fluids containing combinations of ethylene glycol with either propylene glycol or glycerol, which Maes does not do as discussed above, Maes clearly does not teach or suggest combining an ethylene glycol based heat transfer fluid in any specific proportions with propylene glycol or glycerol. A general description that compounds may be mixed does not render obvious specific formulations that provide unexpected results. See In re Baird, 16 F.3d 380, 382 ("The fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that compound obvious."); MPEP 2144.08.

As set forth in the specification, the present inventors discovered that adding a second glycol, such as propylene glycol or glycerol, in the specific proportions recited in the claims as amended to an ethylene glycol based heat transfer fluid unexpectedly reduced the toxicity of the resulting fluid below the level that would have been predicted based on the properties of the individual fluids. Where, as here, a claimed range achieves unexpected results, the claimed range is patentable over the prior art. In re Woodruff, 919 F.2d 1575 (Fed. Cir. 1990); MPEP § 2144.05. Accordingly, even under the Examiner's reading of Maes, which applicants maintain is incorrect, claims 22, 26-27, and 30-32 are nevertheless patentable under 35 U.S.C. § 103 for at least this reason.

At pages 7-8 of the Office Action, the Examiner correctly states that Maes does not teach with sufficient specificity a method for reducing the toxicity of an ethylene glycol based fluid by the addition of a polyhydric alcohol such as propylene glycol or

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glycerol. The Examiner incorrectly states, however, that it would have been obvious to one skilled in the art to reduce the oral toxicity of an ethylene glycol based fluid because Maes teaches or suggests reducing the oral toxicity by addition of a diol such as propylene glycol. Maes does not recognize or discuss the problem of reducing the oral toxicity of ethylene glycol based fluids, much less describe, teach or suggest a method to reduce the toxicity of a non-aqueous ethylene glycol based fluid as recited in the new and amended claims. Moreover, Maes does not describe, teach or suggest, combining ethylene glycol containing fluids with a polyhydric alcohol such as propylene glycol or glycerol in any specific proportions, much less the specific proportions recited in the amended claims.

For at least the foregoing reasons, claims 22, 26-27 and 30-32 are patentable over Maes under 35 U.S.C. § 103(a).

The Rejection Under 35 U.S.C. § 103(a) Based Upon Hansen

Claims 22-23 and 25-29 stand rejected under 35 U.S.C. § 103 over Hansen, U.S. Patent No. 4,728,452. Claims 23-25 and 28-29 have been cancelled. For at least the reasons set forth below, claims 22, 26-27 and 30 as amended, and new claims 31-32 are patentable over Hansen under 35 U.S.C. § 103(a).

Hansen describes coolant compositions for use in aqueous coolant systems. Col. 1, lines 7-10. The compositions include water soluble corrosion inhibitors to reduce corrosion of metal surfaces in the cooling system using aqueous coolants. Col. 2, lines 24-57. Hansen states that the corrosion inhibitor composition may be used in water alone, "or water in admixture with freezing point depressing amounts of at least one alcohol, at least one glycol or a mixture of at least one alcohol and at least one glycol" in a closed aqueous cooling system. Col. 2, lines 40-44. Hansen states that "mixtures of ethylene glycol and diethylene glycol are particularly preferred." Col. 3, lines 40-41.

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Hansen does not describe, teach or suggest adding a second glycol, such as propylene glycol or glycerol, to an ethylene glycol containing fluid to reduce the oral toxicity of the fluid as recited in claims as amended. Accordingly, the claims as amended are not obvious in view of Hansen. *See In re Baird*, 16 F.3d 380 383 (Fed. Cir. 1994) (finding a smaller subset of compounds unobvious in view of a reference disclosing a vast number of compounds, particularly where disclosure indicates a preference leading away from the claimed compounds).

Hansen does not describe, teach or suggest combination of an ethylene glycol containing fluid with a second glycol, such as propylene glycol, in any proportions, much less in the proportions set forth in claims 22, 26-27 and 30 as amended and new claims 31-32. The general description that compounds may be mixed does not render obvious specific formulations that provide unexpected results. *See In re Baird*, 16 F.3d 380, 382 ("The fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that compound obvious."); MPEP 2144.08.

Moreover, as demonstrated by the test results set forth in the application at paragraphs 0058-0069 and 0080-0083, the addition of propylene glycol or glycerol to fluids containing ethylene glycol in the proportions recited in the claims as amended unexpectedly reduced the oral toxicity of the ethylene glycol containing fluid to levels that render the fluid safe. Where, as here, the Applicant shows that a claimed range achieves unexpected results relative to the prior art, a prima facie case of obviousness is rebutted. *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990); MPEP § 2144.05. There is no teaching or suggestion in Hansen to combine ethylene glycol with either propylene glycol or glycerol in any amount, much less in the proportions recited in claims 22, 26-27 and 30-32.

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At pages 9-10 of the Office Action, the Examiner correctly states that Hansen does not teach with sufficient specificity a method for reducing the toxicity of an ethylene glycol based fluid by the addition of a polyhydric alcohol such as propylene glycol or glycerol. The Examiner incorrectly states, however, that it would have been obvious to one skilled in the art to reduce the oral toxicity of an ethylene glycol based fluid because Hansen teaches or suggests reducing the oral toxicity by addition of a diol such as propylene glycol. Hansen does not recognize or discuss the problem of reducing the oral toxicity of ethylene glycol based fluids, much less describe, teach or suggest a method to reduce the toxicity of a non-aqueous ethylene glycol based fluid as recited in the new and amended claims. Moreover, Hansen does not describe, teach or suggest, combining ethylene glycol containing fluids with a polyhydric alcohol such as propylene glycol or glycerol in any specific proportions, much less the specific proportions recited in claims 22, 26-27 and 30-32.

For at least the foregoing reasons, claims 22, 26-27 and 30-32 are patentable over Hansen under 35 U.S.C. § 103(a).

The Rejections Under 35 U.S.C. § 103(a) Based Upon Wood

Claims 22-23 and 25-29 stand rejected under 35 U.S.C. § 103 over Wood, U.S. Patent No. 4,455,248. Claims 23-25 and 28-29 have been cancelled. For at least the reasons set forth below, claims 22, 26-27 and 30 as amended, and new claims 31-32 are patentable over Wood under 35 U.S.C. § 103(a).

Wood describes an antifreeze coolant composition for use in aqueous coolant systems and heat transfer services. Col. 3, lines 13-26. The compositions include water soluble corrosion inhibitors to reduce corrosion of metal surfaces in the cooling system using aqueous coolants. Wood states that the corrosion inhibitor composition is based upon one or more glycols. Col. 2, lines 56-67. Wood lists several glycols that may be

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used in the formulation, but Wood does not describe any specific mixtures of glycols.

Wood states that ethylene glycol is most preferred, col. 3, lines 1-2, and all of the examples provided in Wood use only ethylene glycol. Col. 5, line 9 to col. 6, line 54.

Wood does not describe, teach or suggest combination of an ethylene glycol containing fluid with a second glycol, such as propylene glycol or glycerol, in any proportions, much less in the proportions recited in the claims as amended. The general description that compounds may be mixed does not render obvious specific formulations that provide unexpected results. See In re Baird, 16 F.3d 380, 382 ("The fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that compound obvious."); MPEP 2144.08.

Moreover, as demonstrated by the test results set forth in the application at paragraphs 0058-0068 and 0080-0083, the addition of propylene glycol or glycerol to fluids containing ethylene glycol in the proportions recited in the claims as amended, unexpectedly reduced the oral toxicity of the ethylene glycol containing fluid to levels that render the fluid safe. Where, as here, the Applicant shows that a claimed range achieves unexpected results relative to the prior art, a prima facie case of obviousness is rebutted. In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990); MPEP § 2144.05. There is no teaching or suggestion in Wood to combine ethylene glycol and a second glycol, such as propylene glycol or glycerol, in any proportions, much less in the specific proportions recited in claims 22, 26-27 and 30-32.

At pages 8-9 of the Office Action, the Examiner correctly states that Wood does not teach with sufficient specificity a method for reducing the toxicity of an ethylene glycol based fluid by the addition of a polyhydric alcohol such as propylene glycol or glycerol. The Examiner incorrectly states, however, that it would have been obvious to one skilled in the art to reduce the oral toxicity of an ethylene glycol based fluid because

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Wood teaches or suggests reducing the oral toxicity by addition of a diluent such as propylene glycol. Wood does not recognize or discuss the problem of reducing the oral toxicity of ethylene glycol based fluids, much less describe, teach or suggest a method to reduce the toxicity of a non-aqueous ethylene glycol based fluid as recited in the new and amended claims. Moreover, Wood does not describe, teach or suggest combining ethylene glycol containing fluids with a polyhydric alcohol such as propylene glycol or glycerol in any specific proportions, much less the specific proportions recited in the claims as amended.

For at least the foregoing reasons, claims 22, 26-27 and 30-32 are patentable over Wood under 35 U.S.C. § 103(a).

The Double Patenting Rejection

The Examiner has issued a provisional double patenting rejection citing four copending patent applications. Pursuant to MPEP § 804, if this is the sole remaining rejection prior to issuance of any of the copending applications as patents, this rejection should be withdrawn in this case. While Applicants do not admit that the claims of the present invention are obvious in view of any one of those copending applications, in the event that one or more of the copending applications issues as a patent prior to this application, Applicants will file a terminal disclaimer to obviate the double patenting rejection.

In view of the foregoing remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes after considering these remarks, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

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Because the reasons above are sufficient to traverse the rejection, Applicants have not explored, nor do they now present, other possible reasons for traversing such rejections. Nonetheless, Applicants expressly reserve the right to do so, if appropriate, in response to any future Office Action.

A petition for a two month extension of time and the associated fee is filed concurrently herewith. Because July 9, 2006 fell upon a non-business day, Applicant submits that this Response to Office Action is filed within a timely manner. If any additional fee is required, or if necessary to cover any deficiency in fees previously paid, authorization is hereby given to charge our Deposit Account No. 50-3569.

Respectfully submitted,

Date: July 10, 2006


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